

What is claimed is:

1. A manufacturing method of a dispersion flattened fiber with high negative dispersion ranging from about -20 ps/nm/km to about -60 ps/nm/km, comprising the steps of:

- 5 (a) preparing a silica tube;
- (b) cleaning the silica tube;
- (c) forming a cladding on an inner peripheral surface of the silica tube;
- (d) forming a first ring-type core on an inner peripheral surface of the cladding;
- 10 (e) forming a first low refractive region on an inner peripheral surface of the first ring-type core, wherein the refractive index of the first low refractive region is lower than that of the cladding;
- (f) forming a second ring-type core on an inner peripheral surface of the first low refractive region;
- (g) forming a second low refractive region on an inner peripheral surface of the second ring-type core, wherein the refractive index of the second low refractive region is lower than that of the cladding;
- 15 (h) forming the a central core on an inner peripheral surface of the second low refractive region;
- (i) heating the silica tube, thereby forming a preform of the dispersion flattened fiber; and
- 20 (j) extracting the dispersion flattened fiber from the preform.

2. The method of claim 1, wherein the silica tube is prepared on a board for a modified chemical vapor deposition at step (a).

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3. The method of claim 1, wherein the silica tube is heated under the temperature of about 1900°C at step (b).

4. The method of claim 1, wherein the cladding has the same
10 refractive index as the silica tube.

5. The method of claim 1, wherein the cladding is formed using SiCl₄.

15 6. The method of claim 1, wherein the first ring-type core having a refractive index higher than that of the cladding is formed by using GeCl₄ or POCl₃ together with SiCl₄.

7. The method of claim 1, wherein C₂F₆ or SiF₄ flows together
20 with SiCl₄ into the silica tube in order to form the first low refractive region.

8. The method of claim 1, wherein the second ring-type core having a refractive index higher than that of the cladding
25 is formed by having GeCl₄ or POCl₃ with SiCl₄ gas flow into the silica tube.

9. The method of claim 1, wherein the second low refractive region is formed by having C_2F_6 or SiF_4 flow together with $SiCl_4$.

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10. The method of claim 1, wherein $SiCl_4$ and $GeCl_4$ are provided into the silica tube to form the central core at step (h).

10 11. The method of claim 1, wherein the silica tube is heated under the temperature of $2000^{\circ}C$ or beyond at step (i).

12. The method of claim 1, further comprising the step of
15 (k) jacketing the silica tube on the preform after the step
(i).